

The treatment of Hip-joint disease
in Children by excision.

The question of the treatment of hip-joint disease in children must necessarily be looked at from two points of view.

1st. From the point of view of the Best possible treatment.

2nd. From the point of view of the Best expedient treatment.

This fact has an important bearing on the subject of excision.

1st. The Best Possible Treatment, according to the opinion expressed in all the recent literature of Surgery, entails a prolonged course of surgical supervision, with careful nursing, good diet, and preferably residence near the sea.

Such a line of treatment is only available where the patient is wealthy, or where hospital accomodation is sufficiently extensive to allow the

monopoly of beds by Chronic Cases.

2nd. The Best Expedient Treatment, resolves itself practically into the question of early excision of the diseased joint.

To quote authors :-

Holmes, (Diseases of Children 1868 Page 427).

"Cases of hip-disease in the children of the poor must, by force of circumstances, be judged on different ground to those where prolonged treatment necessarily extending over several years can be carried out."

Wright, (Hip Disease in Childhood, 1887 page 97)

"In private practice, cases are usually seen in the early second stage, & it is possible to ensure that the Thomas' Splint shall be kept on and no strain thrown upon the joint, hence recovery without operation is the rule."

Ibid " ~~In almost every instance~~ once this chronic ^{or aseptic} ~~osteomyelitis~~ is established, nothing short of excision can, in hospital cases, prevent the ultimate progress of the disease to abscess, and too often to gradual exhaustion of the patient by pain

and discharge."

(Footnote, page 126) Wright, in a short criticism of Howard Marsh on Hip Disease (Diseases of joints 1886) says:- "Mr Marsh bases his opinion rather upon the condition to be met with in private than in hospital practice".

(Ashby and Wright. 1892. Page 610.)

Wright, contrasting the ideal treatment with the hospital practice says "In either case the presence of progressive disease in spite of treatment, with an abscess other than a residual one, or sinuses or great thickening indicates immediate excision. If sinuses exist with receding disease, diminishing and puckering in of cicatrices, or if with an abscess the mischief is quite quiescent or receding, non-operative treatment should be adopted for a time if it can be thoroughly carried out; if not, or if no progress is made in a few weeks, the diseased part should be removed."

Howard Marsh. (Diseases of Joints 1886.

Page 307.)

"Choice between excision and the cure of the disease by rest early applied and sufficiently long continued. Can it be doubted which method wherever it is possible should have the preference?"

On this point the middle and upper classes acting on the advice they receive have returned a decided answer. The operation of excision is almost unknown amongst them----- In the fact that those who could most readily secure all the advantages which it has to offer have entirely discarded it, we may trace the strongest proof that excision under favourable circumstances can be and had better be avoided."

Wright thus seems to hold that in private practice the case seldom goes on to suppuration, but if it does so then excision ought to be performed. In hospital practice suppuration is more common, and as soon as it appears, excision ought to be the rule.

Howard Marsh's opinions on private ^{and hospital Practice} appear to be embodied in one and the same line of treatment, but from the fact that his hospital patients have the advantage of prolonged treatment

ment, at the Alexandra Hip Hospital they are practically in the same position - from the point of view of treatment - as private patients.*

With due recognition of the possible fallacy in the proper distinction between private and hospital practice in the literature of excision, the following paper deals with

1st. History of excision of hip.

2nd. Digest of views expressed in the literature of hip disease during the last ten years.

3rd. Summary of fifty-one unrecorded cases of Excision of Hip, extracted from the reports of the Hospital for Sick Children, Pendlebury, Manchester, from 1886-93, with a detailed account of each case.

I.

1st. History of Excision of Hip.

Leading Events.

1742. Schlichting reported a case of extraction of head of thigh bone for hip joint disease in a girl aged 14 years . (Barwell, Diseases of Joints, 1860. Page 414.)

1821. White of Westminster Hospital excised the hip of a boy. (Ibid).

1831. Syme (Treatise on the excision of Diseased Joints, Page 124).

"It has been proposed to cut out the hip joint on account of ~~the~~ caries -----There is no hesitation in regarding the operation as decidedly improper, Since it is well known that the acetabulum is with hardly any exception implicated in the disease and usually suffers from it to a greater extent than the femur."

1845. Fergusson Excision in preference to amputation. (Medico-Chirurgical Transactions).

1857. Hancock. Excision of Head of Femur and floor of Acetabulum. (Lancet 1857. April 18th.

1860. (previous to this year)

Fock "The proper moment for the operation has arrived as soon as caries of the joint has been diagnosed with certainty" (Barwell , Diseases of Joints 1860 Page 442.)

1860. Barwell. ~~Even if external abscess be already~~ formed the efficacy of extension should be fully tried."

1867. Lister Antiseptic Surgery, (Lancet 1867,

1869. British Medical Journal 1868.)

1875. Thomas "Diseases of Hip, Knee, and Ankle joints."

The introduction of Thomas' hip-splint by ensuring efficient early treatment in hip-joint disease, has had an important bearing on the frequency of excision.

1876. Annandale "The Pathology and Operative Treatment of Hip-disease" (Page 45.)

"Antiseptic ^{exploratory} ~~explanatory~~ incision, wherever signs of suppuration present. If ^{destruction} ~~destitute~~ of articular cartilage with caries of bone, excise. If articular cartilage unaffected, free drainage, rest."

1881. Report of Sub-committee of London Clinical Society on the question of early excision of head of femur in cases of disease of hip-joint. (Macnamara. Diseases of Bones and Joints 1887. Page 429.)

" Conclusions.

1st. Rest and free drainage in first place, excision when this fails.

2nd. Mortality less by about five per cent in treatment by rest and extension than by excision.

3rd. Mortality from Meningitis slightly less in excision cases.

4th. Condition of limb afterwards.

Excision cases. Movement more frequently present and more extensive, but gait often insecure and with considerable limp.

Rest and Extension cases. Limb more or less fixed, but more firm and useful for purposes of progression.

5th. Amount of Bone to be removed. Great Trochanter not to be removed unless extensively involved in the disease. Preserve attachment of ^{glutei} ~~glutei~~ to trochanter. Where pelvis is diseased, remove trochanter.

6th. Pathological Specimens.

In nearly 60 per cent necrosis had occurred. But only in some cases firm sequestra of considerable size. In others small soft sequestra which might have been thrown off in discharge. "

1888. Barker. Hunterian Lectures (British Medical Journal Vol I Page 1326) suggested the immediate suturing of excision wound without drainage.

1888. Barker and Pollard. (British Medical Journal. 1888 Vol. 2 page 1336.)

New method of operating followed by primary union. "Essentials of operation

- (1) Whole of tubercular growth must be removed.
- (2) Perfect asepsis must be assured.
- (3) Bleeding must be checked and wound made as dry as possible.
- (4) Oozing must be checked by the even elastic support of a wool dressing and a moderately tight bandage.
- (5) Absolute rest of the part must be maintained during the process of healing.

No drainage. Primary union. "

1890. Barker. Excision of Hip combined with hot water flushing method.

No drainage. Primary union.

(Transactions of London Medico.Chirurgical Society Vol. LXXIV Page 39)

II. 2nd. Digest of literature of last ten years.

(A). Indications for Operating.

(a). Edmund Owen. (The surgical diseases of children. 1885. Page 426.)

" Excision affords the only chance of recovery in certain advanced cases.

When the local and constitutional disturbances of a suppurating joint is becoming greater than the child can bear, excision may bring immediate relief, the temperature falling straightway and convalescence setting in.

Albuminaria and the presence of a large hard *liver* should be taken as a suggestion rather than as a contra-indication for operation. It may become quiescent and even disappear, if the great articular trouble can be afforded relief.

Excision is demanded also when pus is finding its easy way into the pelvis through an ulceration in the depths of the acetabulum, as made out by rectal examination.

Incipient Phthisis is no contra-indication.

----- But simply because he is desperately bad, we should not stand by and refuse that chance of recovery - remote though it may seem to be - which excision may hold out."

(b). Howard Marsh (Diseases of Joints 1886 Page 321)

"(1). When the whole head of femur a loose sequestrum.

(2). In spite of three or four months rest and drainage suppuration remains copious and general health giving way, provided there is no extensive disease of femur or pelvis and no wide burrowing of matter in limb.

(3). When along with continued suppuration there is so much displacement of upper end of femur that limb cannot be brought into good position without operation.

In any of the above conditions commencing amyloid disease is additional ground for excision.

(4). Draining pus in pelvic aspect of acetabulum. "

(c). G. A. Wright. (Hip-disease in Childhood 1887, Page 97.)

" Where there is an abscess outside the joint, or without this, great trochanteric thickening or much pain that does not yield to treatment, excision ought to be performed.

Timely excision cuts short the disease, saves pain, lessens the time of treatment, and gives a better limb.

Growth in length of femur takes place almost entirely at its lower epiphysial line.

In almost every instance I have found much more extensive disease than might be expected from the external evidence. "

(d). Macnamara. (Diseases of Bones and Joints 1887, Page 428.)

" Abscesses connected with the joint which have been drained antiseptically and rest given to joint yet patient continues to grow worse, grating being detected, no evidence of lardaceous disease, excise head and neck along with great trochanter. "

(e). Erichsen. (Science and Art of Surgery 1888, Page 478.)

" For the prevention of death from hectic, excise in disease of hip-joint.

Femoral Coxalgia most benefited by operation.

In the acetabular pelvic form of coxalgia, the ultimate result is, I believe, invariably fatal if the disease be allowed to run its course unchecked by operation.

Excision is imperatively demanded also in those cases in which the acetabulum has been perforated secondarily in the consequence of disease commencing in head of femur.

Early excision is also required in those cases in which the head of femur is necrosed.

When dislocation takes place early before the head has been extensively destroyed, giving rise to very marked flexion, adduction, and rotation inwards, excision of the bone is often the only means by which the limb can be brought into good position and in such cases it may be undertaken at an early period.

Barker. (London Medico-Chirurgical Transactions,
Vol. LXXIV. Page 39.)

" Cases selected ----- have always been those in which in spite of all the care which could be bestowed upon them during months of treatment, the bone has been steadily invaded and abscesses have formed, advanced gradually towards the skin and threatened to burst through it."

^{Mansell}
~~Maxwell~~ Moullin. (Text-book on Surgery 1891. Page 675)

" If when the case is first seen there is distinct thickening around the bone of great trochanter with a regular rise of temperature of an evening, or if a long rest has been tried without success or with only a slight degree of improvement and that of a temporary character ----- Unless two or three years complete rest can be assured, excision should be performed.

Sometimes when the head of femur is lying detached and loose in the cavity of an abscess, or the upper end of bone is soft and carious, or portions of the acetabulum have undergone necrosis -----

a kind of excision may be performed, the sinuses being laid open and the whole of diseased bone being as far as possible removed.

The same thing may be required in the case of intra-pelvic suppuration to provide free drainage. A slight degree of amyloid disease does not preclude excision.

Jacobson. (The Operations of Surgery 1891. Page 1039)

" My own opinion as to the advisability of excision in the ordinary hip-disease of hospital children is that it should be resorted to.

(1). When suppuration is present and has resisted a due trial of rest and antiseptic incision, and drainage, this latter step giving an opportunity, though a limited one, of investigating the amount of disease present.

(2). When there is much thickening about the great trochanter.

(3). When there is much pain, especially at night, not yielding to a due trial of rest.

(B). Contra-indications for Operating.

Howard Marsh. (Diseases of Joints 1886, Page 321).

" (1). Early stage of disease although pus present excision unjustifiable - because disease curable.

(2). Excision generally uncalled for even when sinuses present.

(3). When bones carious and general health affected, excision of doubtful benefit, because of
(a) ten per cent of such operated cases are fatal.
(b) Twenty-five per cent exhibit no improvement. "

G. A. Wright. (Hip-disease in Childhood 1887 Page 97)

" (1). Old pelvic disease.

(2). Health broken down.

(3). Patient over fifteen years.

Under these circumstances amputation should be adopted. "

Erichsen. (Science and Art of Surgery, 1888. Page 478)

" Excision never required in cases where no suppuration has taken place.

Excision not necessary in arthritic coxalgia. "

Jacobson. (The Operations of Surgery. 1891. Page 1042

"Excision should be performed, in my opinion, only before the appearance of lardaceous disease."

Method of Operating. (Ashby and Wright. Diseases of Children. 1892. Page 614.)

1. Anterior incision of Parker.

2. Posterior incision.

"Wright advocates the posterior incision over middle of trochanter and slightly concave forward.

----- Strip back the periosteum as far as it exists-as such.

----- femur sawn through ^{just} ~~joint~~ below trochanteric margin with key-hole saw. Some part of the trochanteric epiphysis is usually left behind. The bone should be sawn through in situ and not forcibly thrust out of wound. The acetabulum should be examined and any sequestra removed. If there is a large carious surface it may be gouged or scraped with a Volkmann's spoon or left alone.

The upper end of femur should be examined

and lower section made if necessary.

If the wound be made aseptic it should be carefully cleaned and closed by sutures after injection of iodoform emulsion. If the case is one with old standing sinuses we prefer to leave it quite open and in that case a large drainage tube should be passed deep into the cavity of the joint. Any sinuses or abscess cavities should be thoroughly scraped out. Where intra-pelvic abscess exists the acetabulum should be perforated."

Howard Marsh. (Diseases of Joints, 1886. Page 322.)

"Advocates posterior incision over great trochanter. The removal of the great trochanter should be avoided if possible."

Barker. (London Medico-Chirurgical Transactions, Vol. LXXIV. Page 39.)

Anterior incision of Parker. All tubercular material removed by means of flushing scoop with sterilised hot water. Wound made dry. Iodoform emulsion injected. Sutures. No drainage.

Erichsen. " 1st. T shaped incision.

When sinuses present, but at some way from the seat of disease.

2nd. Semi-lunar incision of Sayre.

with sub-periosteal method of operating and section of bone above trochanter minor.

When free choice as to position of incision.

3rd. Parker's anterior incision.

when head of bone alone diseased and it is not necessary to remove trochanter, more especially if abscess points anteriorly. "

Jacobson. (The Operations of Surgery 1891, Page 1039)

" Posterior Incision. The chief advantage of this is ~~its~~ ^{its} better drainage, a point which out-weighs in my opinion, where suppuration is present, the smaller interference with muscles entailed by the incision in front.

Section of femur. Through the great trochanter is preferable to the one through the neck. "

Treves . (Operative Surgery, 1891. Page 697.)

- " (1). External incision.
- (2). Sub-periosteal method.
- (3). Anterior incision.
- (4). Posterior incision. "

Pollard and Marshall. (Lancet 1892. Vol.2. Page 186.)

- (1). Anterior incision.
- (2). Barker's flushing method in some cases.

No drainage as a rule.

After Treatment.

Wright. (Ashby and Wright, 1892. Page 615.)

" The extension apparatus is applied to the limb before the operation, so that the ^{weights} ~~Wright's~~ or better Bryant's Splint can be applied at once before the patient is put to bed.

The sooner excision cases are got up and about, the better. Some cases may leave their bed in three weeks.

We keep our patients in a Thomas' Splint for at least 3-6 months after excision. After this, the child, if old enough, should get about with a pattern and crutches allowing the limb to swing and only after a year or more should be allowed to gradually bear weight on limb."

Howard Marsh. (Diseases of Joints, 1886. Page 322)

"Weight extension (3 lbs) Sand bags. As soon as wound heals patient may be up in a Thomas' Splint and crutches. He should not bear weight on the limb for at least three months after the parts are soundly repaired."

Barker. (British Medical Journal, 1890. Vol. 2. Page 1009.)

, "Perfect immobilisation kept up for probably some four or five months after operation before patient allowed to walk."

Jacobson. (The Operations of Surgery. 1891 Page 1039)

"Cases of hip-excision should be got up at end

of six or eight weeks.

Double Thomas' Splint worn from four to eight months.

Not allowed to use affected limb for upwards of one year after operation. "

Results.

Howard Marsh. (Diseases of Joints 1886. Pages 308 & 320.)

" Mortality after excision. In carefully selected cases no serious complications arise and favourable repair is the rule.

In advanced cases, mortality; ten per cent.

Condition of Limb. The defects of excision lie chiefly in the ultimate condition of the limb. When operating on children under nine and ten, the limb remains short and weak and seriously distorted. The limb is usually very inferior to the average limb that is obtained when recovery has followed treatment by rest. "

G. A. Wright. (Hip-disease in Childhood 1887 Page 188)

" Necessary Mortality after operation very small

Condition of Limb. Though less stable than an ankylosed limb, the limb after excision is generally more useful than after the natural cure.

Close fibrous union very common.

Movement through 30-50 degrees commonest.

Smaller number complete mobility.

Bony ankylosis ~~very rarely~~ rare.

Flail-like joints ~~exceedingly~~ rare.

Shortening varying from 1-3 inches (one year after operation).

Statistics quoted by Wright (page 110).

Cases.	Recovery	Death.
2461.	1566.	841. "

Erichsen. (Science and Art of Surgery 1888, Page 485.)

" Mortality. directly referable to the operation itself is but small.

Utility of Limb. after successful excision where there has been destructive bone disease.

Shortening 2-3 inches.

Limb well nourished, straight and firm and allowing easy and rapid progression.

Anchylrosis fibrous. Power of external rotation and abduction lost."

Treves. (Operative Surgery. 1891 Page 708.)

" It must be acknowledged that, taking a large number of average cases the results which follow the treatment by rest are superior in all respects to such as follow the treatment by excision."

Barker. (London Medico-Chirurgical Transactions, Vol. LXXIV. Page 39.

" Seven cases of excision of Hip-disease combined with hot water flushing method. Primary union in six."

Pollard and Marshall. (Lancet 1892. Vol 2. Page 186)

" Statistics of 37 cases of Excision of Hip.

Incision anterior. Barker's flushing method employed in some cases. No drainage as a rule.

In some of the cases it was decided to deal with them as thoroughly as possible without excision so as to

give them a chance of ^{healing} ~~treating~~ without destroying the natural support of the joint. In all these cases with the exception of one it was judged best to excise the joint at a later period on account of the unsatisfactory progress of the case.

Thirty-seven operations.

Eight, or 21.6 per cent are known to be dead.

The mortality directly dependent on the operation was 10.8 per cent (four Patients). Of the remaining four cases, two died from intercurrent affections, unconnected with Tuberculosis, and two died from other ~~ether~~ Tubercular complications.

There remains twenty-nine cases.

27 Cases followed up

2 Cases not found.

Of the Twenty-seven cases, seventeen are now healed and going about without splints. The remaining ten cases are still wearing splints, four firmly healed six have a sinus.

The effect of Flushing is favourable as regards the primary healing of the wound. Seven cases out of twelve having healed by primary union, whereas only eleven out of twenty-five healed by first inten-

tion when flushing was not resorted to.

III. 3rd. Summary of fifty-one unrecorded cases of
Excision of Hip, extracted from the reports of the
Hospital for Sick Children, Pendlebury, Manchester.
 1886-1893. with a detailed account of each case.

<u>Total.</u>	<u>51.</u>
(a). <u>Useful limb</u> , child walking without any support whatever, and no sinuses present.	18.
(b). <u>Useful limb</u> , child walking about without any support whatever, but with sinus or sinuses present.	3.
(c). Child walking with the aid of crutches or crutch. No sinus present.	5.
(d). Child walking with the aid of crutches or crutch. Sinuses or sinus present.	5.
(e). Still under treatment in Thomas' Splint and no sinuses present	5.
(f). Still under treatment in Thomas' Splint Sinuses present.	1
(g). Dead.	12.
(h). Useless limbs	2.

Number of years since operation of Excision.

reckoning from date of excision to January 1895.

Class (a). Useful limb. No sinuses.

- 1 eight years and two months.
- 1 seven years and nine months.
- 2 seven years and eleven months.
- 1 six years and five months.
- 1 six years and eleven months.
- 1 six years and seven months.
- 1 five years and eight months.
- 1 five years and seven months.
- 1 five years and three months.
- 1 five years.
- 1 five years and two months.
- 1 four years and eleven months.
- 1 four years and six months.
- 1 four years and nine months.
- 1 three years and six months.
- 1 three years.
- 1 two years.

Class (b). Useful limb. Sinuses.

- 1 eight years since excision.

1 two years since excision.

1 one year and nine months.

Class (c). Child walking with the aid of
crutches or crutch. No sinuses.

1 Excision September 1886. Amputation June /87

1 Five years and eleven months since excision

1 Three years and six months " "

1 One year and four months " "

1 One year and four months " "

Class (d). Child walking with crutches, or
crutch. Sinuses present.

1 Six years and Nine months since excision.

1 Six years. " "

1 Five years and six months " "

2 Seven years and eleven months " "

Class (e). Still under treatment in Thomas'

Splint. No sinuses.

1 Two years and three months since excision.

1 Two years and nine months " "

1 One year and three months " "

1 One year and nine months " "

1 One year and five months " "

Class (f). Still under treatment in Thomas' Splint.

Splint. Sinuses.

1 Two years and nine months since excision,

Class (g). Dead.

Cause of Death.

4 Tubercular Meningitis.

1 Eight months after excision.

1 Twelve days " "

1 Two months and 14 days after excision.

1 Two years " "

1 with Cerebral Symptoms two years after excision

1 Diphtheria four days after excision.

6 Cause unknown.

1 Nine months after excision.

1 Fifteen months " "

2 2 Two years " "

1 1 One year " "

1 One month " "

Class (h). Useless Limbs.

1 Two years and six months after excision .

amputation advised, but not allowed.

1 Five years and four months after excision.

CASE 1. 1886.

W. K. Age 13 years.

Admitted. August 18th. 1886.

Discharged. December 22nd. 1886.

Family History. Father died of Phthisis.

Previous History. Good.

Present Illness. Twelve months ago injured right hip. Has had pain in joint ever since. An abscess formed over joint, and was opened.

State on Admission. Right thigh flexed almost to right angle. Considerable swelling in outer and upper aspect. Trochanter thickened. Joint fixed. Wound below ischial tuberosity. Temperature elevated.

September 25th. Skin over trochanter has given way.

September 29th. Excision. Posterior ⁱⁿ ~~exc~~ision.

Acetabulum rough, contained one small sequesterum. Cartilage gone. Head of femur rough, all articular cartilage gone. Half of epiphysis gone, rest pale and carious. Shaft Healthy. Joint contained lymph, and curdy material. Drainage. Bryant's splint.

December 22nd. Condition very unsatisfactory.

Wounds show no tendency to heal. Temperature
unsteady.

December 23rd. Taken home at wish of friends, in
Thomas' hip-splint. *June 30th.*

June 30th. 1887. Discharging sinuses about right
hip. Spleen and liver enlarged. Temperature
irregular. Trace of albumen in urine.

June 30th. 1887. Amputation at hip-joint.

Acetabulum well covered, no bare bone felt.

August 3rd. Stump healed. Temperature normal.

January 1895. By Letter.

General health good. Stump sound. No discharg-
ing sinuses.

T.P. Age 4 years.

Admitted. November 6th. 1886.

Discharged. December 27th. 1886.

Family History. Tubercle on father's side.

Previous History. Good.

Present Illness. Injury 12 months ago. Right hip
bad ever since.

Signs and Symptoms. Pains in right knee. Night Cry.

State on admission. Right thigh flexed, adducted,
rotated inwards. Considerable lordosis. Much
swelling, with fluctuation over outer part of
joint, and an abscess is pointing just below
the trochanter. Temperature normal.

November 11th. Spray. Chloroform. Soft grating.

Incision over trochanter. Quantity of pus evacuated. Excision through neck. Ligamentum teres gone. Bone carious. Acetabulum slightly affected at margin. Drainage.

November 12th. Dressed.

December 1st. Wound unhealthy. Tube out.

December 27th. Sent home in Thomas hip splint.

January 1895. By Letter.

1. Limb quite healed in April 1888.
2. He walked with crutches in February 1888.
and without crutches in August 1890.
3. He never uses crutches now.
4. There are no discharging wounds now.

CASE 3. 1886.

B. W. Age three years.

Admitted. October 23rd. 1886.

Discharged. December 18th. 1886.

Family History. Tubercle on Mother's side.

Previous Health. Good.

Present Illness. History of injury. Duration,
eight months.

Signs and Symptoms. Pain in right hip. Inability
to walk.

Treatment previous to admission. Thomas' splint
four months.

State on admission. Right hip much swollen. Swel-
ling and fluctuation over trochanter. Pain on
movement. Shortening. Trochanteric thickening

November 4th. Grating in joint but not very

distinct. Excision. Trochanter sliced off,
and turned back. Then section through neck.

One to two ounces of pus. Articular cartilage
loose. A large loose sequestrum comprising
nearly the whole of the upper epiphysis lying
in situ. Two cheesy foci below line of
section, made gouging the shaft necessary.

N Iodoform dressing. Bryant's Splint.

November 5th. Dressed.

December 1st. Tube taken out.

December 18th. Sent home in Thomas ' hip splint.

Wound superficial.

January 1895. By letter.

Wounds healed in January 1887.

In August 1887 an abscess appeared in the groin
which burst.

One week afterwards, the boy died.

CASE 4. 1887.

M. H. Age eleven years.

Admitted. May 2nd. 1887.

Discharged. August 29th. 1887.

Family History. Good. No tubercle.

Previous History. Good.

Present Illness. Injury, August 1886.

Signs and Symptoms previous to admission.

Pain in right hip. Limp. Night cry.

Treatment previous to admission. Kept at rest for
eight months.

State on admission. Right limb Adduction Rotation
outwards. Trochanteric thickening. Abscess
around joint. Rigidity of joint.

Treatment. Extension, 4 pounds.

May 5th. Chloroform Spray. Excision. Incision.

Posterior. Two thirds of Epiphysis gone.

Acetabulum perforated. Sequestrum removed
from Acetabulum.

Section. Points of congested and softening bone,
with points (of tubercle?). Healthy at section
with shaft. Drainage. Iodoform. Bryant's
splint.

May 6th. Dressed.

May 18th. Dressed, wound discharging.

June 8th. Large abscess over front of thigh opened.

July 13th. Tube removed.

August 29th. Discharged, Thomas' hip splint. Not
much discharge from wounds.

Re-admitted. December 6th. 1887.

Condition. Excision wound covered with profuse
granulations. Sinus at junction of upper and
middle third of thigh, discharging pus. Limb
in good position. Much atrophied.

Died of Tubercular Meningitis. December 25th, 1887.

CASE 5. 1887.

J. C. Age one year, and one month.

Admitted. May 2nd. 1887.

Discharged. May 17th. 1887. (Died).

Family History. Good, no tubercle.

Previous History. Good.

Present Illness. Dates from injury three months ago.

Signs and Symptoms previous to admission.

Pain on movement. Inability to walk. Night-cry.

Treatment previous to admission. Rest.

State on admission. Right limb flexed, rotated outwards. Tense swelling about hip-joint, with fluctuation. No passive movement permitted.

May 5th. Chloroform. Spray. Excision. Disease started in epiphysis. Articular cartilage of femur loose, but healthy. Rest of head yellow, soft, and caseous. The disease spread down the shaft, and a second section was made which just escaped a cheesy sequestrum. Acetabulum healthy. The abscess cavity being a large one, a counter opening was made below and behind. Large drainage tubes, and iodoform.

May 6th. Dressed.

May 9th. Convulsions supervened, and child succumbed
to tubercular meningitis on May 17th. 1887.

CASE 6. 1887.

S. B. Age eight.

Admitted. ~~Ma~~ March 9th. 1887.

Discharged. May 20th. 1887.

Family History. Good. No tubercle.

Previous History. Has been in Pendlebury Hospital
twice previously, with disease of hip.

Present Illness. Dates from September, 1886. No
history of injury.

Signs and symptoms. Pain in left hip, night-cry,
no abscess.

Admitted to Pendlebury, November, 1886.

Treatment. Extension.

Discharged on December 27th. 1886, in Thomas' hip
splint.

Re-admitted. February 12th. 1887. Bad night-cry.
No abscess.

Treatment. Extension.

Discharged. February 23rd. 1887, in Thomas' hip
splint.

State on admission. March 9th. 1887.

Fulness over front of joint, with distinct

fluctuation, and prominent superficial veins.
Very slight flexion, with loss of fold. No
night-cry. No enlarged glands in iliac fossa.
Temperature varying between 100 and 98 degrees.

April 1st. Swelling increasing.

April 14th. Chloroform Spray. Excision. Posterior
incision. Greater part of head gone, section
shewed fatty degeneration. Upper and outer lip
of acetabulum bare. Femur at point of section
healthy. Abscess opened separately, and drained.
Excision wound drained.

April 15th. Dressed.

May 16th. Tube left out.

May 20th. Sent home in a Thomas' hip splint.

Wound not quite healed.

January 1895. By Letter.

Excision wound healed two months after leaving
hospital. Wore splint for three months. Can
walk now. Discharging sinus present.

CASE 7. 1887.

S. H. Age six.

Admitted. February 12th. 1887.

Discharged. March 9th. 1887.

Family History. Good. No tubercle.

Present Illness. Duration 13 months. Injury three months previously.

Signs and Symptoms. previous to admission.

Swelling of right hip. Pain in knee. Limping.

Treatment previous to admission. Thomas' hip-splint for last five months. During last three weeks swelling has been getting worse.

State on admission. Delicate-looking child. Right lower extremity in position of flexion.

Rotation inwards. There is a large gluteal abscess, and a good deal of swelling about hip-joint.

Trochanter thickened. Outline indistinct, and it is approximated to iliac crest. Groin full. No enlarged glands in iliac fossa. No adductor swelling. He can only just move the limb.

Extension applied.

17th February. No night-cry since admission.

Temperature varying between 99" and 97".

February 17th. Chloroform Spray. Excision.

Section. Supra trochanteric. Acetabulum bare.
Upper end of femur gouged, the bone being soft.
About one third of cartilage had gone from head,
and on making a section through it, there were
several soft yellowish points, the bone being
inflamed generally. Abscess over gluteal region
opened, and a drainage tube inserted. The
abscess communicated with the hip. Iodoform
dressing. Bryant's splint.

February 21st. Dressed.

March 2nd. All tubes taken out.

March 9th. Wound superficial. Went out in Thomas'
hip-splint.

January. 1895. By Letter.

Wore his splint for two years. Is able to walk
now without crutches; and works in a coal-mine.
Has no discharging sinuses.

CASE 8. 1887.

A. H. Age six.

Admitted. February 5th. 1887.

Discharged. March 16th. 1887.

Family History. Good. No tubercle.

Previous History. Good.

Present Illness. Injury two years, five months ago.

Six months afterwards limped, and pain in right knee.

April, 1886. Thomas's hip-splint.

October 1887. Admitted to Pendlebury with an abscess just below anterior superior spine, aspirated, and pus withdrawn.

December 5th. 1886. Sent out in Thomas' hip-splint.

Re-admitted, February 5th. 1887. Right limb rotated outwards. Pain on movement at hip-joint. Over upper and outer part of thigh is a large abscess. Outline of trochanter rounded. Iliac glands not enlarged.

February 10th. Chloroform. Excision. Excised through neck. Bone at point of section not healthy. Portion gouged away. Very soft. Abscess in thigh opened, and drainage tube put

in. No apparent communication with hip.

Acetabulum bare at outer margin. Greater part of cartilage gone from head. On section the portion removed presented some dirty yellow points, suggestive of tubercle.

February 13th. Dressed.

March 6th. Upper tube taken out; lower one shortened.

March 16th. Has made an uninterrupted recovery since operation. General health much improved. Wound healed. Went out in Thomas' hip-splint.

January, 1895. By Letter.

Wore her splint for three years. Was able to walk four years after operation. Can walk very well without crutches. No discharging sinuses now present.

CASE 9. 1887.

M. W. Age seven.

Admitted. January 22nd. 1887.

Discharged. March 22nd. 1887.

Family History. Good. No tubercle.

Previous History. Good.

Present Illness. No history of injury, Limp noticed
in May, 1886. Night-cry.

Treatment previous to admission. Thomas' hip-splint
for nine months.

State on admission. Right limb extended, and rotated
outwards. Thickening in upper part of thigh.
No fulness in groin. Abscess pointing six
inches below anterior superior spine. Trochant-
er is rounded and slightly pushed up. Flatten-
ing of gluteal region, and loss of fold.
Enlarged iliac glands. Slight passive movement
permitted. Slight active movement.

January 26th. Abscess aspirated.

February 2nd. Refilled.

February 10th. Excision. Chloroform. Large seques-
trum in position of calcar. Trochanteric
section. Abscess of thigh opened by incision
in front, and drainage tube put in. Iodoform.

Bryant's splint.

February 11th. Dressed.

March 20th. Much improved. Wounds superficial and healthy. Most discharge from lower one.

March 22nd. Discharged in Thomas' hip-splint.

Temperature rather unsteady after operation, from 101 degrees to 98, but steady before discharge.

January 1895. By Letter.

Did not wear her splint after leaving hospital.

The wound soon healed; but broke down again.

Was able to walk in 18 months time. Can walk now with one crutch. Discharging sinus still present.

CASE 10. 1887.

H. C. Age nine.

Admitted. January 26th. 1887.

Discharged. April 12th. 1887.

Family History. Good. No tubercle.

Previous History. Good.

Present Illness. No history of injury. Twelve months ago pain in left hip, limping, night-cry.

Previous Treatment. Thomas' hip-splint for last seven months. Aspiration twice.

State on admission. Considerable swelling about left hip, with fluctuation. There is the mark of an unhealed aspiration puncture on the upper and outer part of thigh. The limb is much shortened and very much rotated inwards. The trochanter is thickened, rounded, and almost on a level with the anterior superior spine. Gluteal region flattened into loss of fold. Slightest movement causes great pain. Enlarged gland in iliac fossa.

January 29th. Aspirated three ounces thin pus and flakes of lymph.

February 3rd. Chloroform. Hip excised above

trochanter. Pelvic sequestra. Whole head soft.

Bone soft at point of section and gouged.

Abscess at other part of thigh, communicated

with hip, and was opened and scraped.

March 5th. All tubes taken out. Doing fairly well.

March 15th. Temperature very unsteady. Tubes put
back.

April 4th. Large abscess in front of thigh, and
another on pelvis.

April 12th. Consent for amputation refused. Went
out in a Bryant's splint.

January 1895. By Letter.

Wore splint four months. Walked in eighteen
months time. Walks with crutches now. Scanty
discharge from sinus.

CASE 11. 1887.

J. C. Age four.

Admitted. January 27th. 1887.

Discharged. May 12th. 1887.

Family History. Good. No tubercle.

Previous History. Good.

Present Illness. No history of injury. Illness

commenced acutely three weeks ago, with vomiting and shivering. A week afterwards, complained of pain in right hip, and a swelling appeared over front of thigh.

State on admission. Right lower limb flexed, abducted, rotated outwards. Large abscess occupies upper part of thigh. Great pain.

January 22nd. Chloroform. Incision made over great trochanter. Sixteen ounces of thick pus escaped. Head of bone entirely gone, and trochanter bare. Acetabulum bare; no perforation.

Drainage tube. Temperature on admission. 97".

Rose after operation to 103.2.

Dressed every day.

January 28th. Chloroform. Through previous incision. Upper part of femur excised; two sections were made, the first presenting several yellow

caseous points. Acetabulum perforated.

Venter of ilium bare as far forwards as anterior superior spine.

February 3rd. Temperature still unsteady.

March 17th. Temperature about normal.

March 26th. Tube taken out.

May 12th. Wounds about hip completely healed.

Position of limb satisfactory. General health good. Discharged in double Thomas' hip-splint and plaster.

January 1895.

By Letter.

Wore his splint for three years. Can walk now without crutches, but with a patten on excised limb. Two discharging sinuses still present.

CASE 12. 1888.

M. R. Age ten.

Admitted. March 27th. 1888.

Discharged. April 1888.

Family History. Good.

Previous History.

Present Illness. Duration four months. No history
of injury.

Signs and Symptoms previous to admission.

Swelling of right hip. Pain in hip.

State on admission. Swelling of right thigh with
fluctuation. Trochanteric thickening.

April 12th. Chloroform spray. Excision. Acetabulum
bare and almost perforated. Sequestrum removed.
Head cartilage pitted. Epiphysis spongy.
Drainage tube.

April 13th. Dressed.

April 16th. Died of Diphtheria.

CASE 13. 1888.

E. L. Age six and a half.

Admitted. June 12th. 1888.

Discharged. July 26th. 1888.

Family History. Good

Previous History. Good.

Present Illness. Duration one year. No history of injury.

Symptom. Pain in left hip.

State on admission. Left hip. Rigidity at the hip-joint. Abscess of thigh.

June 21st. Excision. Chloroform Spray. Incision over great trochanter. Trochanteric section. Head cartilage eroded. Not much disease of bone.

June 22nd. Dressed.

July 24th. Sent home in Thomas' hip-splint. Wound healed.

Re-admitted. January 19th. 1895.

History. Was in Heywood ward in 1888 and had left hip excised. One year and seven months afterwards an abscess formed about the left hip and was treated in Heywood ward. For the last four years she has walked without crutches, but, although there was some shortening of the limb

she did not have a patten or thick sole on boot.

Five days ago a swelling was noticed in left hip.

State on admission. Big well-nourished girl.-

Lungs and heart normal. Left lower extremity.

Muscles of thigh and leg somewhat wasted. One

and a half inches shortening (from anterior

superior spine to internal malleolus). Some

mobility at hip-joint. Flexion and extension

through about twenty degrees. Scar as of old

excision over position of great trochanter.

Cicatrix sound. Cicatrix anteriorly at edge of

tensor vaginal femoris as of old abscess opened.

On outer side of thigh about junction of upper

and middle third is a round fluctuating swelling.

No heat, redness, nor tenderness. Temperature

on admission 99".

January 24th. Chloroform. Incision over fluctuating

swelling. Thick curdy pus evacuated. The cavity

was found to communicate with the joint, but

there was no carious spot in femur. The cavity

was carefully scraped, and syringed with hot

mercuric chloride (1 in 3000) followed by hot

boracic lotion. Iodoform emulsion was injected.

Silk sutures. No drainage. Wood wool dressing.

February 1st. Dressed. Wound healed throughout by primary union. Took out alternate stitches.

February 4th. Took out remaining stitches.

February 8th. Discharged in Thomas' splint. Wound sound.

CASE 14. 1888.

A. K. Age three and a half years.

Admitted. February 22nd. 1888.

Discharged. May 31st. 1888.

Family History. Good.

Previous History. Good.

Present Illness. Duration three weeks. History of
injury.

Signs and Symptoms. Limping. Night-cry.

State on admission. Left lower limb. Flexion.

Inversion. Rigidity at hip-joint. Trochanteric
thickening.

April 23rd. Much thickening and persistent and
frequent night-cry.

April. 26th. Chloroform. Excision. Incision over
and above great trochanter. Joint opened and
explored with finger. Thick curdy pus. Head
of bone sawn off above trochanter. No bare
bone. Acetabulum bare in centre.

April 27th. Dressed.

Developed Diphtheria.

Discharged May 31st.

January 1895. By Letter.

Did not wear her splint after leaving hospital.

Can walk now with the aid of crutches. Has two
discharging sinuses now.

CASE 15. 1888.

A. T. Age nine.

Admitted. February 1st. 1888.

Discharged. April 2nd. 1888.

Present Illness. Duration two years. History of
injury.

Signs and Symptoms. Pain and swelling.

State on admission. Rigidity at hip-joint. Trochan-
teric thickening. Fluctuating swelling of thigh.

February 9th. Chloroform. Excision. Spray.

Incision over trochanter. Head excised.

Drainage tubes.

April 2nd. Discharged.

January. 1895. By Letter.

Wound healed in two years. Wore splint three
years. He was able to walk in three months
after leaving hospital, with the aid of crutches
in three years without crutches.

He can walk now, but uses a stick, his leg being
short and weak, but he can ride a bicycle with ease,
thirty miles or more a day. No discharging
wounds now.

CASE 16. 1888.

W. R. Age five years.

Admitted. February 7th. 1888.

Discharged. April 4th. 1888.

Family History.

Previous History.

Present Illness. Duration One year.

History of Injury.

State on admission. Right lower limb adducted.

Inverted. Shortened. Trochanteric thickening.

Fluctuating swelling in upper part of thigh.

Night-cry.

February 9th. Chloroform. Spray. Excision.

Joint opened. Pus evacuated. Head disorganised

Neck sawn through in situ. Cartilage loose.

About one third head absorbed. Rarefying

osteitis of neck. Acetabulum bare about centre.

Drainage tube. Bryant Splint.

February 10th. Dressed.

March 9th. Tubes taken out.

March 12th. Large sinus closed.

April 4th. Discharged in Thomas' hip-splint.

January 1895. By Letter.

Wound healed in two years after leaving

hospital. Wore splint four years, but was able to get along on crutches. He now uses one crutch. No discharging wounds now.

CASE 17. 1888.

D. B. Age seven.

Admitted. October 25th. 1887.

Died. January 11th. 1888.

Family History.

Previous History.

Present Illness. Duration, eight months.

State on admission. Thigh flexed, abducted, rotated,

outwards. Large abscess over great trochanter.

October 26th. Abscess opened and scraped.

October 27th. Excision. Chloroform. Spray.

Articular surface of head denuded of cartilage.

Two thirds of head absorbed. Drainage tube.

October 28th. Dressed.

January 11th. 1888. Died of Tubercular Meningitis.

CASE 18. 1888.

J. B. Age seven.

Admitted. December 15th. 1887.

Discharged. February 8th. 1888.

Family History. Good.

Previous History.

Present Illness. Commenced to limp six months ago.

Pain in left hip. Swelling of thigh.

State on admission. Left lower limb. Rigidity at joint. Trochanteric thickening. Pain on movement. Diffuse swelling with fluctuation over upper part of thigh.

October 29th. Chloroform. Grating. Trochanteric section. A bare spot felt above and behind acetabulum. Acetabulum rough. Cartilage gone. No perforation. Abscess opened. Drainage tubes. A quarter of head gone. Disease on both sides of epiphysial line.

January 20th. 1888. Tube left out.

February 7th. Wounds nearly healed. Limb in good position. Sent out in Thomas' hip-splint.

January. 1895. By Letter.

Wounds healed in eighteen months after leaving hospital. Wore splint two years. Was able to get along on crutches in seven months after

leaving hospital. He can walk now but has to use crutches the bad limb being considerably shorter than the other. Has been back in Hospital on account of this leg three or four times.

CASE 19. 1888.

E. G. Age five.

Admitted. June 12th. 1888.

Discharged. August 8th. 1888.

Family History. Bad. Tubercle.

Previous History. Not good.

Present Illness. Duration, sixteen months. No history of injury.

Signs and Symptoms. Night-cry.

Treatment previous to admission. Thomas' hip-splint for a year.

State on admission. Limb extended and adducted.

Trochanteric thickening. Fluctuating swelling in upper part of thigh.

June 18th. Chloroform. Spray. Excision. Head very much diseased. Acetabulum bare. Drainage.

August 8th. Discharged in Thomas' hip-splint.

January. 1895. By Letter.

He was taken to India in 1888. Wounds healed in eighteen months time. Wore splint for six months. Can walk now, but has to use crutches. Goes to school occasionally. Has one discharging sinus.

CASE 19. 1888.

E. G. Age five.

Admitted. June 12th. 1888.

Discharged. August 8th. 1888.

Family History. Bad. Tubercle.

Previous History. Not good.

Present Illness. Duration, sixteen months. No history of injury.

Signs and Symptoms. Night-cry.

Treatment previous to admission. Thomas' hip-splint for a year.

State on admission. Limb extended and adducted.

Trochanteric thickening. Fluctuating swelling in upper part of thigh.

June 18th. Chloroform. Spray. Excision. Head very much diseased. Acetabulum bare. Drainage.

August 8th. Discharged in Thomas' hip-splint.

January. 1895. By Letter.

He was taken to India in 1888. Wounds healed in eighteen months time. Wore splint for six months. Can walk now, but has to use crutches. Goes to school occasionally. Has one discharging sinus.

CASE 20. 1888.

M.J.D. Age six.

Admitted. August 7th. 1888.

Discharged. October 14th. 1888.

Family History. Bad. Tubercle.

Previous History. Good.

Present Illness. History of injury eighteen months ago. Began to limp twelve months ago. Swelling of right thigh six days ago.

Treatment previous to admission. Thomas' splint for six months.

State on admission. Right lower limb. Rotated outwards. Large fluctuating swelling in upper and anterior part of thigh.

August 16th. Chloroform. Spray. Excision.
Drainage.

September 27th. Wounds almost healed.

October 14th. Sent out in Thomas' hip-splint.

January. 1895. By Letter.

Wounds completely healed three years after leaving hospital. She wore the splint two years. Was able to walk with crutches in one year. Was able to walk without crutches in

three years time. A fortnight ago, a small
abscess opened in groin, which is now healing.

CASE 21. 1889.

F. Y. Age eleven.

Admitted. December 11th. 1888.

Discharged. June 27th. 1889.

Family History. Good.

Previous History. Never been a strong child.

Present Illness. Duration, two years.

Signs and Symptoms. Pain in right hip and knee.

Inability to walk.

State on admission. Right lower limb. Adduction.

Rotation inwards. Dislocation on to dorsum

ili. Trochanteric thickening. Marked rigidity

at hip joint. No abscess.

December 18th. Abscess above and behind great trochanter.

January 17th. 1889. Excision. Head found dislocated.

Supra-trochanteric section. Acetabulum diseased. perchloride of mercury (1 in 3000). Iodoform. No drainage.

January 20th. Dressed.

January 21st. Owing to high temperature and tenseness of wound, stitches removed and tube put in.

January 28th. Tube left out.

April 6th. Wound gaping and showing no tendency to heal.

June 27th. Discharged in Thomas' hip-splint.

Died. March 1890.

CASE 22. 1889.

E. P. Age three.

Admitted. May 14th. 1889.

Discharged. June 25th. 1889.

Family History. Bad. Tubercle.

Present Illness. History of injury. Duration, six months. Limping. Kept at rest for five months.

State on admission. Left lower limb. Large abscess over great trochanter.

May 23rd. Chloroform Spray. Excision. Head of bone carious. No drainage.

May 25th. Dressed. Two stitches taken out.

June 18th. Healed.

Home in Thomas' hip-splint.

January 1895. By Letter.

Wounds healed in 1891. Was able to walk in

1892. Can walk now without crutches. No discharging sinuses.

CASE 23. 1889.

T. J. Age five.

Admitted. May 24th. 1889.

Discharged. July 13th. 1889.

Family History. Bad. Tubercle.

Present Illness. Duration, twenty-one months.

No history of injury.

Signs and Symptoms. Limping. Swelling about left hip.

Treatment previous to admission. Thomas' hip-splint four months.

State on admission. Left hip. Rigidity and pain at hip-joint. Limb flexed and adducted. Swelling of left thigh with wide marked fluctuation. Trochanter displaced upwards. Left limb about three quarters of an inch shorter than right.

June 3rd. Chloroform Spray. Excision. Large abscess, anteriorly spreading down thigh, not continuous with excision wound and treated separately. Tube introduced into abscess cavity. Excision wound sutured up without drain.

June 4th. Dressed.

June 14th. Dressed. Stitches taken out. (also tube left out).

June 28th. Healed.

July 13th. Discharged in Thomas' hip-splint.

January 1895. By Letter.

Big strong boy. One leg a little shorter than
the other. No wounds of any kind.

CASE 24. 1889.

H. W. Age five.

Admitted. September 11th. 1888.

Discharged. January 11th. 1889.

Family History. Good.

Present Illness. Duration two years. No history of injury.

Signs and Symptoms. Limping. Pain.

State on admission. Left lower limb. Flexed.

Rigidity at hip-joint. Pain on movement.

October 17th. Fluctuation over great trochanter.

October 18th. Night-cry.

November 15th. Night-cry.

November 15th. Chloroform. Spray. Excision. Head atrophied. Acetabulum rough. Drainage.

November 16th. Dressed.

November 17th. Night-cry.

November 26th. Night-cry.

January 10th. 1889. No night-cry. Wound almost well.

January 11th. Sent out in Thomas' hip-splint.

January 1895. By Letter.

Wounds healed in about three years. Wore splint four years. Was able to walk without crutches in five years. No discharging wounds now. Walks

1895, one leg healed in about three years. Wore the

lame, one leg being two inches shorter than the other.

CASE 25. 1889.

T. C. Age ten and a half.

Admitted. June 18th. 1889.

Discharged. September 20th. 1889.

Family History. Good.

Present Illness. Duration, eight months.

Signs and Symptoms. Limping.

Treatment. Extension for eight months.

State on admission. Left lower limb. Rigidity at hip-joint. Adduction. Half an inch shortening. Swelling over trochanter with deep fluctuation. Extension applied.

August 6th. Abscess behind trochanter distinctly larger, and another collection has formed pushing forwards beneath extensor fascia.

August 8th. Spray. Excision. No grating. Perforation with sequestrum found at front part of acetabulum. Head removed supra trochanteric section. No drainage.

August 9th. Dressed.

August 20th. Night-cry four times.

August 31st. Wound almost healed. Stitches removed

September 9th. Wound healed.

September 20th. Discharged in Thomas' hip-splint.

January 1895.

By Letter.

Is ill in bed with five discharging sinuses.

CASE 26.1889.

J. O. Age ten.

Admitted. September 3rd. 1889.

Discharged. October 22nd. 1889.

Family History. Good.

Present Illness. Duration, twelve months. History of
injury.

Signs and Symptoms. Limping. Pain. Swelling of
thigh.

Treatment. Rest in bed.

State on admission. Right lower limb. Flexion.

Rotation inwards. No shortening. Rigidity at
hip-joint. Trochanteric thickening. Abscess
round joint.

September 12th. Chloroform. Spray. Head. Rarefy-
ing osteitis of whole of epiphysis. Disease on
both sides of epiphyseal line. Acetabulum bare.
Not perforated. Drainage.

September 13th. Dressed.

October 9th. Wound healed. Sent out in Thomas'
hip-splint.

Died in Pendlebury. July, 1892.

CASE 27. 1889.

W. M. Age ten.

Admitted. December 19th. 1888.

Discharged. March 28th. 1889.

Present Illness. Duration, one year. History of
injury.

Signs and Symptoms. Pain in hip. Night-cry.

Treatment previous to admission. Thomas' hip-splint
six months.

State on admission. Left hip much swelled. Fluctu-
ation over trochanter. Great trochanter thicken-
ed. Rigidity at hip-joint.

December 27th. Night-cry.

December 31st. Chloroform. Spray. Head two thirds
gone. Acetabulum bare. No drainage. Wound not
sutured.

March 19th. 1889. Wound healed.

March 28th. Discharged in Thomas' hip-splint.

January 1895. By Letter.

Wore splint four months. Was able to walk in
six months. Can walk and run about now without
crutches. No discharging wounds since he left
the hospital.

CASE 28. 1889.

M.O.M. Age five.

Admitted. March 13th. 1888.

Discharged. May 19th. 1888.

Family History. Good.

Previous History. Good.

Present Illness. Duration twelve months. History of injury.

Signs and Symptoms. Pain in left hip. Swelling of thigh. Left lower limb flexed, adducted, rotated inwards. No abscess about joint. Limb straightened under chloroform. Sent out in Thomas' hip-splint.

Re-admitted. October 9th. 1888.

Discharged. January 28th. 1889.

State on admission. Left lower limb. Large abscess beneath the tensor vaginal^e femoris.

October 24th. Excision. Spray. Sequestrum lying loose in joint. Acetabulum perforated. Head squashy and disorganised. No trace of upper epiphysis. About one ounce of pus in joint. Drainage.

October 25th. Dressed.

January 29th. 1889. No discharge. Sent out in

Thomas' hip-splint.

January 1895.

Child well and hearty and going to school.

One limb much shorter than the other. Wore her

splint for five years. Can walk now without crut

crutches. No discharging wounds..

CASE 29. 1890.

A. W. Age three.

Admitted. March 8th. 1890.

Discharged. July 2nd. 1890.

Family History. Bad. Tubercle.

Previous History. Good.

Present Illness. Duration ten months. History of
injury.

Signs and Symptoms. Night-cry. Swelling. Pain.

Treatment previous to admission. Thomas' hip-splint
for nine months.

State on admission. Right lower extremity. Much
thickening about hip-joint. Movement painful.
Limb flexed and everted. An abscess points at
inner side of groin.

March 8th. Abscess opened, tube put in.

March 21st. No improvement.

March 21st. Chloroform. Grating. Excision.

Acetabulum perforated. Sequestrum removed.

Head considerably diseased. Cartilage stripped
off. Sub chondral caries. Drainage.

July 2nd. Discharged in Thomas' hip-splint.

Excision wound healed. Abscess incision still
discharging.

January 1895.

By Letter.

Wore splint for eighteen months. Was able to walk at the end of eighteen months. Can walk now without crutches. No discharging wounds.

CASE 30. 1890.

S. H. Age five.

Admitted. August 20th. 1890.

Discharged. December 2nd. 1890.

Family History. Good.

Previous History. Good.

Present Illness. Duration uncertain. Has worn a

Thomas' hip splint for three months.

Signs and Symptoms. Pain in knee.

State on admission. Right lower limb. Thickening
around hip-joint. Quarter of an inch shorten-
ing.

October 6th. Bad night-cry. Fluctuation over hip-
joint.

October 9th. Chloroform. Excision(flap). Pus in
joint. Head and neck extensively diseased.
Acetabulum perforated. No drainage.

October 19th. Stitches removed. Wound almost
sound.

December. Discharged in Thomas'hip-splint. Wound
sound.

1893. Died.

Case 31. 1890.

M. F. Age six.

Admitted. June 19th. 1890.

Discharged. October 29th. 1890.

Family History. Bad. Tubercle.

Present Illness. Duration, three years. History
of injury.

Signs and Symptoms. Night-cry. Abscess.

Treatment previous to admission. Thomas' hip-splint
for twelve months.

State on admission. Left lower limb. Thickening
around hip-joint. Shortening three quarters of
inch. Fluctuation below Ponpart's ligament.

July 3rd. Chloroform. Spray. Excision. Acetabulum
diseased. Tubercular granulation tissue at
back of joint. No drainage.

July 14th. Wound healed. Wound broken down again.

October 29th. Discharged in Thomas' hip-splint.

Discharge almost nil.

January 1895. By Letter.

Wound healed in six months time. Wore splint
for three years. Can walk now without crutches.
No discharging wounds. Treated for Residual
abscess.

1894. Healed up now.

CASE 32. 1890.

P. R. Age five.

Admitted. January 1st. 1890.

Discharged. August 3rd. 1890.

Family History. Tubercle.

Previous History. Good.

Present Illness. Duration, twenty months. History
of injury.

Signs and Symptoms. Pain in knee and hip-joint.

Night-cry. Limping.

Treatment previous to admission. Thomas' hip-splint
for one year.

State on Admission. Left lower limb. No shortening.
Swelling around hip. Fluctuation above and
below Ponpart's ligament.

February 6th. Chloroform. Spray. No pus in joint.

Joint completely destroyed. A few pieces of
dead bone represented the head of femur.

Large sequestrum removed from acetabulum.

Abscess cavity treated separately. No drainage.

February 10th. Wound dressed. Tubes inserted.

April 10th. Cavity scraped again.

August 3rd. Sent home in Thomas' hip-splint.

April 1891. Readmitted with sinuses.

January. 1895. Wounds healed in 1892. Wore his
splint for two years. Was able to walk in
two years time. Can walk now without crutches.
No discharging wounds.

CASE 33. 1891.

M. D. Age four and a half.

Admitted. June 11th. 1891.

Discharged. September 2nd. 1891.

Family History. Tubercle.

Present Illness. Duration, twelve months. History
of injury.

Signs and Symptoms. Difficulty in walking. Night-
cry.

State on admission. Right limb flexed and adducted.
Trochanteric thickening.

July 3rd. Deep fluctuation below ponpart.

July 7th. Chloroform. Excision. Grating. Pus in
joint. Small sequestra. Head of bone removed
in several pieces. Acetabulum bare and rough.
Drainage.

August 20th. Considerable amount of discharge.

September 2nd. Discharged in Thomas' hip-splint.

January 1895. By Letter.

Wore splint until 1893. Was able to walk in
1893. Can walk now without crutches. No
discharging wounds. Is in the United States,
and is doing well.

CASE 34. 1891.

J. B. Age four.

Admitted. November 4th. 1890.

Discharged. January 27th. 1891.

Family History. Tubercle.

Previous History. Delicate child.

Present Illness. Duration, nine months.

Signs and symptoms. Limping. Pain. Swelling.

Treatment. Thomas' hip-splint for six months.

State on admission. Left lower limb. Flexion.

Adduction. Rotation inwards. Trochanteric thickening. Abscess over trochanter. No shortening.

November 20th. Chloroform. Excision. Neck much diseased. Acetabulum healthy. No drainage.

November 27th. Wound almost healed. Some discharge.

January 27th. Discharged in Thomas' hip-splint.

Admitted in June 1891, with spinal caries.

1893. Died with cerebral symptoms.

CASE 35. 1891.

M. A. H. Age eight.

Admitted. June 29th. 1891

Discharged. September 2nd. 1891.

Family History. Tubercle.

Present Illness. Duration ten months. No history
of injury.

Signs and Symptoms. Pain in knee, and hip. Swelling
Night-cry.

Treatment previous to admission. Thomas' hip-splint
for three months.

State on admission. Left lower limb. Trochanteric
thickening. Head dislocated. Markedly everted.
Two inches shortening.

July 8th. Chloroform. Excision. Head found lying
under anterior inferior spine of ilium.

Synovial membrane pulpy. Head. Cartilage under-
mined. Bone much diseased. Acetabulum much
diseased, and containing ^{two} ~~the~~ sequestra. Acetab-
ulum perforated. No pelvic abscess. No drainage.

July 17th. Dressed.

July 29th. Stitches removed. Wound healed.

September 2nd. 1891. Discharged in Thomas' hip-
splint.

January 1895.

By Letter.

Wore splint for two years. Was able to walk in
two and a half years. Walks now with crutches.
No discharging wounds.

CASE 36. 1892.

E. F. Age eight and a half.

Admitted. February 26th. 1892.

Discharged. July 2nd. 1892.

Family History. Tubercle.

Previous History. Always been delicate.

Present Illness. Duration, six months. No history of injury.

Signs and Symptoms. Limping. Pain in groin and knee. Night-cry. Swelling of hip.

State on admission. Left hip adducted, rotated inwards, flexed. No real shortening. Trochanter very prominent, and much thickened. Pain on movement. Bad night-cry. Extension applied.

March 22nd. Fluctuant swelling over front of thigh.

April 28th. Chloroform. Grating. Head showed rarefying osteitis. Cartilage undermined, and softened. Acetabulum rough and bare. Abscess cavity communicated with joint. No drainage.

May 14th. Dressed. Wound almost healed.

July 2nd. Discharged in Thomas' hip-splint.

Re-admitted. July 17th. 1893.

State on admission. Left lower limb adducted. One and a half inch shortening. Cicatrix of previous

ious excision. Small sinus discharging at upper part. Movement at hip much restricted. No pain. Atrophy of muscles of thigh.

September 17th. Discharged in Thomas' hip-splint.

Re-admitted. October 17th. 1893.

Bad night-cry. Right lower limb. Extended. Abducted. Rotated outwards. Pain on handling limb. Pelvis rotates with femur. Fluctuation anteriorly over hip-joint.

November 2nd. Chloroform. Grating. Head bare.

early disease on both sides of epiphysial line. Acetabulum bare and pitted.

November 16th. Dressed. Stitches removed. Some thin pus escaped from point of suture.

January 18th. Excision wound scraped. Abscess cavity scraped.

March 14th. Sent out in double Thomas' hip-splints.

Thin purulent discharge from excision wound.

1895. Died of Tubercular Meningitis.

CASE 37. 1892.

W. H. Age two and a half.

Admitted. January 21st. 1892.

Discharged. March 25th. 1892.

Family History. Tubercle.

Present Illness. Duration, twelve months. Followed
measles.

Signs and Symptoms. Pain. Night-cry. Swelling.

State on admission. Right lower limb flexed,
everted, adducted. Trochanteric thickening.
One inch shortening. Large abscess occupies
thigh.

February 1st. Chloroform. Excision. Flap method.

Head of Femur found loose, and removed.

Abscess opened by same incision. No drainage.

February 16th. Dressed. Wound healed. Temperature
normal.

March 26th. Discharged in Thomas' hip-splint.

Wound sound.

January 1895. Wore splint for two years. Was able
to walk in two years. Can walk now without
crutches. No discharging wounds.

CASE 38. 1892.

M. L. Age five.

Admitted. March 24th. 1892.

Discharged. July 1st. 1892.

Family History. Tubercle.

Present Illness. Dates from whooping cough two years ago. Walked about until three months ago.

Signs and Symptoms. Pain. Limping. Night-cry.

State on admission. Left lower limb. Hip-joint rigid. Pain on movement. In position of flexion, adduction. Three quarters inch shortening. Trochanteric thickening. Deep seated fluctuation just below anterior superior spine.

April 22nd. Chloroform. Grating. Flap operation.

Supra trochanteric section. Much pulpy tissue in joint. Acetabulum bare and rough. No sequestra. No drainage.

Head on Section. Disease had begun in epiphysis, and spread downwards to epiphysial line and upper part of diaphysis. Cartilage on head was loose and undermined, and bone at one point bare.

May 6th. Dressed. Wound completely healed.

May 27th. Wound giving way slightly but quite

superficially. Temperature normal.

July 1st. Discharged in Thomas' hip-splint.

January 1895.

By Letter.

Wound healed in 1894. Still wearing splint.

Gets about on crutches. No discharging wounds.

CASE 39. 1892.

J. D. Age eight.

Admitted. April 26th. 1892.

Discharged. October 11th. 1892.

Family History. Good.

Present Illness. Duration, eight months. No history of injury.

Signs and Symptoms. Pain. Lameness. Night-cry.

Treatment previous to admission. Thomas' hip-splint six months.

State on admission. Left hip. Flexed. Adducted.

Shortening half an inch. Pain on movement.

Trochanteric thickening. Swelling with fluctuation on front of thigh.

May 5th. Chloroform. Grating. Semi lunar flap.

Trochanteric section. Acetabulum rough.

Cartilage soft and undermined. Head of bone rough and bare. Cartilage eroded. No drainage.

Temperature rose after operation. Persistent chloroform sickness.

May 9th. Temperature 103" . Dressed. Parts swollen and fluctuant. One suture removed. Thin greyish pus came away. Small tube put in.

May 15th. All sutures removed. Wound gaping.

strapped.

August 10th. Chloroform. Abscess cavity scraped.

September 23rd. Chloroform. Scraping.

October 11th. Discharged in Thomas' hip-splint.

Wound closing.

Has been back in hospital in 1894 to have
sinuses scraped.

January 1895. Still wears splint. Discharging
sinuses.

CASE 40. 1892.

J. R. Age four and a half.

Admitted. August 27th. 1892

Discharged. October 27th. 1892.

Present Illness. Duration, seven months.

Signs and Symptoms. Limping. Pain in knee and thigh.

Inability to walk. Swelling.

State on admission. Right limb flexed at nearly

right angle, with adduction. No shortening.

Rigidity at joint. Trochanteric thickening.

No fluctuation. Night-cry. Extension applied.

September 9th. Fluctuation just behind great
trochanter.

September 29th. Chloroform. No grating. Straight
incision. Pus in joint. Large sequestrum in
centre of neck. Small sequestra removed from
region of calcar. Trochanteric section.
Acetabulum not bare but covered by pulpy tissue.
Head of bone soft and showing tubercular
osteitis. No drainage.

October 11th. Dressed. Wound healed.

October 27th. Discharged in Thomas' hip-splint.

Wound quite sound. Temperature normal through-
out.

January 1895. Well and hearty. Still wearing splint
and getting about on crutches. No discharging
wounds.

CASE 41. 1892.

C. E. Age eleven.

Admitted. May 18th. 1892.

Discharged. October 12th. 1892.

Family History. Tubercle.

Previous History. Tubercular ankle.

Present Illness. Duration, three months.

Signs and Symptoms. Limping. Pain in hip.

State on admission. Right lower limb flexed.

Fluctuation over buttock.

May 19th. Chloroform. Abscess opened. It communicated with joint. Scraping, flushing, injection with iodoform emulsion. Drainage tube.

May 30th. Considerable swelling in front of hip-joint.

June 15th. Fluctuation in front of great trochanter.

June 23rd. Chloroform. Semi-lunar flap. Much pulpy material in joint. Supra-trochanteric section. No sequestra. Bare bone on ischium. Head showed sub^{chondral}~~chordal~~ caries. Drainage.

July 30th. Wound has healed, except at each extremity.

August 25th. Sinuses scraped.

October 6th. Wound quite healed. Discharged in

Thomas' hip-splint.

Re-admitted. January 5th. 1893. Abscess opened
below Ponpart, passing down towards hip-joint.

Urine. No albumen. Liver slightly enlarged.

February 17th. Sinuses still discharging. Amputation
advised, but not allowed.

January. 1895. Cannot walk, Discharging sinuses.

CASE 42. 1893.

M. B. Age one year and two months.

Admitted. April 20th. 1893.

Discharged. June 7th. 1893.

Family History. Tubercle.

Present Illness. Duration, seven months.

Signs and Symptoms. Swelling of thigh.

Treatment previous to admission. Thomas' hip-splint
for seven months.

State on admission. Child has chronic bronchitis.

Left lower limb. Good position. Movement at hip
causes pain. Pelvis rotates with femur. Abscess
in front of joint. Temperature irregular.

May 4th. Chloroform. Anterior incision. Head
removed. No sequestrum. No drainage.

June 7th. Discharged in Thomas' hip-splint.
Temperature normal.

1893. Died.

CASE 43. 1893.

S. D. Age nine.

Admitted. June 22nd. 1893.

Discharged. August 29th. 1893.

Family History. No tubercle.

Present Illness. Duration, nine months,

Signs and Symptoms. Limping, Pain. Night-cry.
swelling.

Treatment previous to admission. Thomas' hip-splint.

State on admission. Urine, no albumen. Liver, not
enlarged. Left lower limb. Good position. No
shortening. Pelvis rotates with femur. Thick-
ening around neck of femur. Fluctuating swell-
ing over front of thigh.

July 17th. Chloroform. Posterior incision. Head
almost gone. Not much acetabular mischief.
No drainage.

August 29th. Discharged in Thomas' hip-splint.

Wound healed. Temperature normal.

January 1895. By Letter.

Still wearing splint, and getting about on
crutches, No discharging wounds.

CASE 44. 1893.

C. H. Age eight.

Admitted. August 10th. 1892.

Discharged. October 27th. 1892.

Family History. Tubercle.

Present Illness. Duration, two years.

Signs and Symptoms. Limping. Pain in hip and knee.

Treatment previous to admission. Thomas' hip-splint
for six weeks.

State on admission. Left hip flexed at a right
angle. Adduction. Internal rotation. Limited
amount of movement at joint. Trochanteric
thickening. No night-cry. Temperature slightly
irregular.

September 4th. Fluctuation anteriorly over joint.

September 15th. Chloroform. No grating. Posterior
incision. Supra-trochanteric section. Pus in
joint. Acetabulum bare, not perforated. No
drainage.

September 28th. Dressed. Wound healed.

October 17th. Fulness in front of joint.

October 19th. Tube put in.

October 27th. Discharged in Thomas' hip-splint

Temperature normal.

1894. Re-admitted with sinuses.

CASE

March, 1895. Still wearing splint. Sinuses dried.*up.*

CASE 45. 1893.

W. S. Age four and a half.

Admitted. January 9th. 1893.

Discharged. May 14th. 1893.

Family History. No tubercle.

Present Illness. Injury to hip two and a half years ago. Kept at rest for three months. Four weeks ago complained of pain in left hip, and walked lame.

State on admission. Left thigh flexed, Rigidity at hip-joint. Thickening about joint.

February 20th. Fluctuation in front of joint.

February 24th. Chloroform. Posterior incision. Pus in joint. Acetabulum rough. Trochanteric section.

March 13th. Wound healed.

May 14th. Discharged in Thomas' hip-splint.

Temperature normal.

January 1895. Wore splint for eight months. Was able to walk in eight months. Can walk now without crutches. Discharging sinuses still present.

CASE 46. 1893.

B. P. Age nine.

Admitted. April 11th. 1893.

Discharged. July 5th. 1893.

Family History. No tubercle.

Present Illness. Was in hospital eighteen months

ago. Has been going about on crutches ever since.

State on admission. Left lower limb. Rigidity at hip

hip-joint. Thickening about neck. Large

abscess in front of joint. Temperature normal.

April 24th. Chloroform. Excision. Posterior incision.

May 8th. Wound healed.

June 22nd. Sinus at back scraped.

July 5th. Discharged in Thomas' hip-splint. Temperature normal.

January 1895. By Letter.

Wearing splint now, and getting about on crutches. No discharging wounds.

CASE 47. 1893.

E. H. Age ten.

Admitted. June 27th. 1893.

Discharged. January 10th. 1894.

Family History. Tubercle.

Present Illness. Duration two years.

Signs and Symptoms. Lameness. Pain in knee and hip.

Six months ago an abscess formed, which burst,
and is still discharging. Night-cry.

Treatment. Rest for eighteen months.

State on admission. Left hip adducted, everted.

One and a half inch shortening. Head dislocated
upwards, and backwards, and ankylosed to pelvis.
General thickening all round joint. No abscess.
Two tubercular ulcers on front of thigh.

Lungs. Diminished. Breathing bronchial. Creaking.

Crepitation. Temperature normal.

July 3rd. Trace of albumen in urine.

August 31st. Chloroform. Excision by posterior

incision. Head very soft. Acetabulum perforat-
ed. No drainage.

September 14th. Wound healed.

September 19th. Cicatrix gaping at upper extremity.

Granulations flabby.

January 8th. Discharged in Thomas' hip-splint.

Wound having granulated up. Temperature normal.

January 1895.

By Letter.

Wore splint for fourteen weeks. Walks now with crutches. No discharging wounds.

CASE 48. 1893.

J. B. Age seven.

Admitted. March 7th. 1893.

Discharged. June 28th. 1893.

Family History. Tubercle.

Present Illness. Duration, eight months.

Signs and Symptoms. Lameness, Pain in hip. Seven months ago a lump was noticed in thigh, which increased in size and burst.

State on admission. Left lower limb flexed, adducted, cannot be extended. Rigidity at hip-joint. Swelling all round trochanter. No fluctuation. Below trochanter is a discharging sinus. Temperature normal.

March 30th. Chloroform. Sinus scraped and found to lead to diseased bone about head and neck of femur. Head of femur excised by posterior incision. Drainage.

June 28th. Discharged in Thomas' hip-splint. Temperature normal.

January 1895. By Letter.

Can walk without crutches. Limb short.

No discharging wounds.

CASE 49. 1893.

R. T. Age one year and eight months.

Admitted. September 9th. 1892.

Discharged. October 27th. 1892.

Present Illness. Duration, seven months.

Signs and Symptoms. Pain. Night-cry. Inability to use limb.

State on admission. Right lower limb. Flexed.

Abducted. Rotated outward. Great rigidity at hip-joint. Trochanteric thickening. Just below anterior superior spine is swelling with fluctuation. Temperature normal.

September 22nd. Chloroform. Grating felt. Posterior incision. Pus in joint. Supra-trochanteric section. Acetabulum soft. No drainage .

Head. Cartilage softened and loose. Centre of ossification in epiphysis was caseating, soft, and pale. Cut section of neck healthy.

Discharged. October 27th. 1892. Temperature normal.

(measles in ward.)

Re-admitted. January 20th. 1893. Hip healing, freely, moveable without pain.

Abscesses in left buttock and fore-arm and behind left malleolus which were treated.

Purulent pan ophthalmitis of left eye.

Discharged. February 17th 1893.

Readmitted. February 28th.

Excision cicatrix broken down owing to splint pressure. Eye enucleated.

April 6th. Contracted Scarlet Fever.

Readmitted. November 21st. 1893.

With sinuses which were scraped. Amputation advised, but not allowed.

Died in 1894.

E. S. Age four.

Admitted. October 31st. 1893.

Discharged. January 22nd. 1894.

Family History. No tubercle.

Present Illness. Duration, twelve months. History
of injury.

Signs and Symptoms. Pain in left knee, Lameness,
Swelling of thigh. Night-cry.

Treatment previous to admission. Extension and
Thomas' splint for twelve months.

State on admission. Left lower extremity. Extended.
Abducted. Rotated outwards. Large globular
fluctuating swelling over upper third of thigh.
Rigidity at hip-joint. Trochanteric thickening.
Pain on movement. Temperature normal.

December 4th. Abscess increasing in size.

December 8th. Chloroform. Excision by posterior
incision. Sequestra removed. Acetabulum bare.
Trochanteric section. No drainage.

December 22nd. Wound healed. Primary Union.

January 22nd. Discharged in Thomas' hip-splint.

March, 1895.

By Letter.

Wore splint until two months ago. Walks now
with crutches. No discharging wounds.

CASE 51. 1893.

E. V. Age six.

Admitted. April 29th. 1893.

Discharged. July 6th. 1893.

Family History. No tubercle.

Present Illness. Duration twelve months.

Signs and Symptoms. Limping. Pain in knee. Bad
night-cry. Swelling of thigh.

Treatment previous to admission. Thomas' splint
for seven months.

State on admission. Right lower limb adducted.

Pain on movement. Thickening about neck of
femur. Fluctuation over joint.

May 18th. Chloroform. Excision by posterior incision
Acetabulum rough.

May 26th. Dressed. Wound healed.

July 6th. Discharged in Thomas' splint. Wound sound.

March 1895. By Letter.

Wore splint three months. Was able to walk in
six months. Can walk now without crutches.
Slight discharge from old wound.